CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 97-026
UPDATED WASTE DISCHARGE REQUIREMENTS AND
RECISION OF WDR N0. 88-040 FOR:

Turk Island Company
Turk Island Class III Landfill,
Union City, Alameda County

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

SITE OWNER AND LOCATION

1. The Turk Island Company (hereinafter referred to as the discharger) is the legal owner and operator of the Turk Island Landfill (Turk Island LF). The site is located approximately 1/4 mile west of Union City Boulevard, in the southwest portion of Union City, Alameda County, along the edge of the San Francisco Bay (Figure 1). The Discharger owns 107 acres at this location of which approximately 57 acres were used for waste disposal.

PURPOSE OF UPDATE ORDER

2. The primary objectives of this order are to: 1) Revise the groundwater, surface water and leachate monitoring programs to evaluate the impact to water quality; 2) Require submission of a plan for final cover repair; and 3) Bring the site into compliance with the appropriate regulations of Articles 5 and 8, Title 23, Division 3, Chapter 15 of the California Code of Regulations.

SITE DESCRIPTION AND HISTORY

3. The Turk Island LF is an unlined, closed Class III landfill located on bay muds and composed of three parcels as shown in Figure 1. The primary parcel occupies approximately 47 acres bounded on the west by salt ponds and on the east by a P.G. & E. easement. This easement separates the primary parcel from two smaller parcels located between the easement and Union City Boulevard. A 6.5 acre parcel containing municipal solid waste, similar in composition to the primary parcel, is immediately east of the easement with a 3.2 acre parcel comprised of inert waste to the east of this parcel. The Turk Island LF site received waste from 1962 through 1986. The primary landfill parcel was closed in 1986. The 6.5 acre and 3.2 acre parcels were closed in 1974. Property owned by the Discharger adjacent to the landfill is currently used for agriculture, however the property is zoned for single unit residential and plans exist for property transfer and development of this open area. As part of this proposed development, the discharger is considering the

consolidation of one or both of these smaller parcels into the main landfill, timed to coincide with the final cover repair.

4. The Regional Board adopted initial Waste Discharge Requirements (WDR) for the Turk Island LF on August 28, 1968. Subsequent permit updates were issued with the most recent permit revision, Order No. 88-040, issued March 17, 1988. This Order rescinds Order No. 88-040.

WASTES AND THEIR CLASSIFICATION

5. Wastes disposed of at the Turk Island LF were comprised primarily of nonhazardous residential and commercial Group II solid wastes including household wastes, grass cuttings, tree trimmings, animal wastes, metals, construction and demolition wastes, and solid industrial debris including auto shredder and paint wastes. The landfill contains between 2.0 and 2.5 million cubic yards of waste.

GEOLOGY

6. **Setting** - The Turk Island LF is located in the Coast Range geomorphic province, at the northernmost extent of the Santa Clara Valley along the southern San Francisco Bay's eastern margin. The Coyote Hills are approximately one mile south of the site. The facility is situated on former bayfront wetlands.

7. **Stratigraphy** - The site is located in a transitional zone with sediments beneath the site reflecting the influences of both the Niles Cone and the San Francisco Bay. These sediments are divided into the following three units:

    - Younger bay muds;
    - Older bay muds; and
    - Newark aquifer sands and gravels.

    The surfacial materials are comprised of clay, silty clay, and subordinate sandy clay to depths of approximately 10 to 15 feet below mean sea level (msl). This unit tends to have relatively low permeabilities and be poorly consolidated. Older Bay Muds are found at depths ranging from 10 to 15 feet through 45 to 55 feet below msl. These older Bay Muds are comprised of more highly consolidated, interbedded clays, silty clays, and some sandy clays with slightly decreased permeability values. A sharp contact exists at the base of the older Bay Muds beneath which is a thick sequence (20-25 feet) of sands and gravels that comprise the Newark Aquifer.

8. **Structure** - The Turk Island LF is located approximately 4 and 12 miles southwest of the Hayward and Calaveres faults, respectively, and 15 miles east of the San Andreas fault system. No known Holocene faults exist at the site.

SURFACE WATER AND GROUNDWATER

9. **Surface water** - Surface water from the East Bay hills and plain east of the site drain into Alameda Creek, $^{3}/_{4}$ mile north of the site and two Alameda County Water District (ACWD) flood control channels, one along the north boundary of the site, and a larger channel approximately $^{3}/_{4}$ mile south of the landfill. Salt-water evaporation ponds and flood-water storage basins occupy the adjacent properties to the north and east of the site, respectively. The original design of the salt-water ponds was adequate to contain the 100-year storm runoff from the north and east until it can be discharged to the bay through Alameda Creek or the flood control channels. The U.S. Army Corps of Engineers has constructed a 15-foot wide channel along the sites western boundary, between the landfill and the salt-water evaporation ponds to divert surface runoff and flood waters from the storage basins to the flood control channel (EMCON, 1992).

   The final cover of the Turk Island LF was originally designed and constructed to provide infiltration protection and graded to promote sheetflow runoff from the facility, however settlement and animal burrowing have significantly compromised these drainage and infiltration controls. Numerous seeps have developed each of the last three years from different portions of the Turk Island LF cap. Cap repairs at the seep locations have not eliminated the recurring problem, indicating that more extensive cap repair is necessary.

10. **Groundwater** - Based on trench, boring log, and groundwater data, the Bay Muds are saturated within a couple of feet of the ground surface. Because of the limited areal extent of any sand units and the low permeability of Bay Muds, groundwater velocities and corresponding well yields are very low in the upper 30 to 55 feet of Bay Mud. Water quality in these stratigraphic units is generally brackish with recharge emanating from the surrounding flood control channels, however groundwater adjacent to the salt-water evaporation ponds along the western portion of the landfill tends to be hypersaline. Salinity decreases with distance from the salt-water evaporation ponds. The groundwater gradient at the site is generally flat and somewhat dependent on tidal influence. The Newark Aquifer is encountered at depths from 45 to 55 feet in the vicinity of the site and extends to depths of up to 200 feet below msl. The ACWD has installed wells in the Newark Aquifer near the site as part of a salinity barrier project to reverse salt-water intrusion from beneath the bay and the salt ponds. Pumping from these wells will have a significant influence on groundwater gradients beneath the site, but this program is currently on hold with no projected re-start in the near future.

    The uppermost groundwater in the younger Bay Muds is monitored at the Turk Island LF, with monitoring wells screened in a discontinuous sandy clay interbed. One monitoring well is screened deeper, in the upper portion of the Newark Aquifer.

11. **Groundwater Separation** - Due to the shallow first encountered groundwater, the site does not meet the requirement for a minimum 5-foot separation between waste and groundwater as specified in Section 2530(c) of Chapter 15. The landfill was constructed prior to the promulgation of these requirements.

12. **Groundwater Degradation** - Results from the Solid Waste Assessment Test Report, submitted for Turk Island LF in June 1989, indicate very infrequent detection of Volatile Organic Compounds (VOCs) in the groundwater beneath the landfill. These concentrations were confined to very low concentrations (i.e. 0.5 to 20 ug/L 1,1-Dichloroethane).

13. **Basin Plan** - The Regional Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) in June 21, 1995 This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resource Control Board and the Office of the Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

14. **Beneficial Uses** - Beneficial uses of the shallow groundwater is to recharge surface water near the site and the San Francisco Bay. The beneficial uses of the south San Francisco Bay include:

    a. Wildlife habitat;
    b. Navigation;
    c. Water contact recreation;
    d. Non-contact water recreation;
    e. Commercial and sport fishing;
    f. Preservation of rare and endangered species;
    g. Estaurine habitat;
    h. Fish migration;
    i. Fish habitat;
    j. Industrial service supply; and
    k. Shellfish harvesting.

    The present and potential beneficial uses of the deeper groundwater (below elevation 45 to 55 feet below msl) are as follows:

    a. Domestic and municipal water supply;
    b. Industrial Process supply;
    c. Industrial Service supply; and
    d. Agricultural supply.

DESIGN OF WASTE MANAGEMENT UNIT

15. The Turk Island LF is unlined, but the underlying Bay Muds exhibit very low permeabilities, ranging from 1 x 10^{-6} to 1 x 10^{-7} cm/sec. The final cover for the landfill is comprised of one foot of clay overlain by a two

foot thick vegetative/protective layer. This final cover design was also incorporated into the closure for both of the smaller parcels. The cover system has a minimum design slope of 3 percent and is covered by vegetation.

16. The Turk Island LF final cover system is in need of repair, as evidenced by recurring seeps observed at several locations on the landfill slopes. These seeps are the result of animal burrows and settlement/ponding on the landfill surface and typically recur at the same locations. In previous years seeps have gone unmentioned in the Dischargers inspection report, only to be discovered by Board or County staff during site visits. Recent inspection reports by the Discharger have indicated issues such as this where maintenance needs to take place.

MONITORING PROGRAM

17. **Groundwater Monitoring** - Historic groundwater monitoring occurred quarterly at ten monitoring wells, all but one are screened in the uppermost water bearing zone of the younger Bay Muds (MW-4A is screened in the Newark Aquifer). The updated groundwater program is detailed in the Discharge Monitoring Plan attached to this Order (Attachment A).

18. **Leachate Monitoring** - Some historic leachate well sampling and analysis was conducted during the SWAT investigation in 1988 and in response to a Regional Board request for technical information in 1995. Leachate level monitoring has been conducted quarterly at 4 leachate wells, all are screened in waste in the main landfill. The updated leachate program is detailed in the Discharge Monitoring Plan attached to this Order (Attachment A).

19. **Surface water monitoring** - Surface water monitoring will be conducted as part of the current General Industrial Storm water Discharge Permit (NPDES) through the approved storm water monitoring plan.

20. **Vadose Zone Monitoring** - Vadose zone monitoring as required by Article 5, Section 2550.7 (Chapter 15, CCR) is not technically feasible as there is no vadose zone at this site.

21. The discharger is required to analyze for the monitoring parameters as presented in Table A-1 of the attached Discharge Monitoring Program attached to this Order (Attachment A).

CALIFORNIA ENVIRONMENTAL QUALITY ACT.

22. This action is exempted from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15301, Title 14 of the California Code of Regulations.

23. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharger and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

24. The Board, in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that The Turk Island Company, its agents, successors and assigns shall meet the applicable provisions contained in Title 23, Division 3, Chapter 15 of the California Code of Regulations and Division 7 of the California Water Code and shall comply with the following:

A. PROHIBITIONS

1. Waste shall not be in contact with ponded water from any source whatsoever.

2. No further waste shall be deposited or stored at this site.

3. Leachate from waste and ponded water containing leachate or in contact with solid wastes shall not be discharged to waters of the State or of the United States.

4. Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). (H & SC Section 5411, CWC Section 13263)

5. The discharger, or any future owner or operator of the site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

    a. Surface Waters

        1. Floating, suspended, or deposited macroscopic particulate matter or foam.
        2. Bottom deposits or aquatic growths.
        3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
        4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
        5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

    b. Groundwater

        1. Groundwater shall not be impacted as a result of solid waste degradation.

B. SPECIFICATIONS

1. All reports pursuant to this order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.

2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100 year 24 hour precipitation event, or as the result of flooding with a return frequency of 100 years.

3. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the site.

4. The existing containment, drainage, and monitoring systems at the facility, shall be maintained as long as leachate is present and poses a threat to water quality.

5. The discharger shall assure that the foundation of the site, the solid waste fill, and the structures which control leachate, surface drainage, erosion and gas are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

6. The final cover system shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water.

7. The discharger shall analyze the samples from the existing groundwater wells as outlined in the Discharge Monitoring Program (Attachment A).

8. In the event of a release of a constituent of concern beyond the Point of Compliance (2550.5), the site begins a Compliance Period (Sect. 2550.6(a)). During the Compliance Period, the discharger shall perform an Assessment Monitoring Program and a Corrective Action Program. The Point of Compliance is defined as the vertical surface located along the outer edge of the waste management unit and extending through the uppermost aquifer underlying the unit.

9. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer.

10. Landfill gases shall be adequately vented, removed from the landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water.

11. The discharger shall maintain all devices or designed features installed in accordance with this order, such that they continue to operate as intended without interruption as provided for by the performance standards adopted by the California Integrated Waste Management Board.

12. The discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

13. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure which threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

14. The discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.

15. The discharger shall maintain the facility so as to prevent a statistically significant increase in water quality parameters at points of compliance as provided in Section 2550.5.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications and Provisions of this Order.

2. The discharger must comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350).

3. The discharger shall submit annual monitoring reports by January 31 of each year in accordance with the attached Updated Discharge Monitoring Program. Sample collection shall be conducted on a six month interval (April and October) for locations on a semi-annual frequency. The discharger shall also submit an annual report to the Board covering the previous calendar year as described in Part A of the Updated Discharge Monitoring Program. In addition to the requirements outlined in Attachment A, this report shall also include the following: location of leachate and groundwater monitoring wells; groundwater and leachate contours for each monitoring event; the existing gas extraction system (annual report only); and gas monitoring results (annual report only).

REPORT DUE DATE: ANNUAL REPORT - JANUARY 31 (OF EACH YEAR)

4. The discharger shall submit **Final Cover Repair/Reconstruction Plan** which shall include, but is not limited to, the following: a schedule for completion of all construction field activities; CQA testing frequencies for in-place soils and any borrow materials; waste consolidation plans and associated post-removal analyses; final cover design drawings; details of landfill gas and leachate well contingencies during cover construction; proposed final gas and leachate well configuration with system changes.

A) PLAN DUE DATE: MAY 19, 1997
B) COMPLETION OF COVER REPAIR FIELD ACTIVITIES BY OCTOBER 31, 1997

5. The discharger shall submit a detailed **Post Earthquake Inspection and Corrective Action Plan** acceptable to the Executive officer to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater at or within 30 miles of the landfill. The report shall describe the containment features, and groundwater monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the landfill structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: SEPTEMBER 19, 1997

6. The discharger shall submit a **Leachate Monitoring System Evaluation**. This plan shall include an evaluation of leachate monitoring wells, collection sumps, and leachate contour levels (in the form of contour maps) as measured during the semi-annual monitoring events. This evaluation will be performed on a semi-annual basis and included with the annual monitoring report.

7. The discharger shall submit a letter report to the Board detailing the repair and maintenance activities that need to be completed prior to the commencement of the following rainy season. This letter report shall also include a schedule for repair and maintenance activities, and cost analysis detailing the anticipated expense for all repair, maintenance, and monitoring during the next 12 months.

REPORT DUE DATE: MAY 1, 1997 and MAY 1 each year thereafter

8. All reports pursuant to these Provisions shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.

9. The discharger shall submit a **Contingency Plan** to be instituted in the event of a surface leak or spill from the leachate facilities. The discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board and the Local Enforcement Agency (LEA). The

discharger shall initiate its contingency action plan to stop and contain the migration of pollutants to receiving waters.

REPORT DUE DATE: JULY 21, 1997

10. The discharger shall file with the Regional Board Discharge Monitoring Reports performed according to any Discharge Monitoring Program issued by the Executive Officer.

11. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

REPORT DUE DATE: IMMEDIATE

12. The discharger shall maintain a copy of these waste discharge requirements and these requirements shall be available to operating personnel at the facility at all times. (CWC Section 13263).

13. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of the waste discharged or related operations.

14. In the event that the discharger-owned property adjacent to the landfill is developed into residential dwellings, the discharger will notify perspective home purchasers of the presence of the landfill.

15. The discharger shall permit the Regional Board or its authorized representative, upon presentation of credentials:

    a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
    b. Access to copy any records required to be kept under the terms and conditions of this order.
    c. Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this order or by any other California State Agency.
    d. Sampling of any discharge or groundwater governed by this order.

16. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes.

17. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this

office. The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgment that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. (CWC Sections 13267 and 13263). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Board and statement. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

18. This Order is subject to Board review and updating, as necessary, to comply with changing State and Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics (CWC Section 13263).

19. Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information (CWC Sections 13260 and 13267).

20. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge [CWC Section 13263(g)].

21. Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of these requirements shall not be affected.

22. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this order [CWC Section 13263(f)].

23. Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of

the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable water Quality Control Plan [CWC Section 13271(a)].

24. The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided orally to the Executive officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267].

25. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurements devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

26. Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR, Part 1360) promulgated by the U.S. Environmental Protection Agency (CCR Title 23, Section 2230).

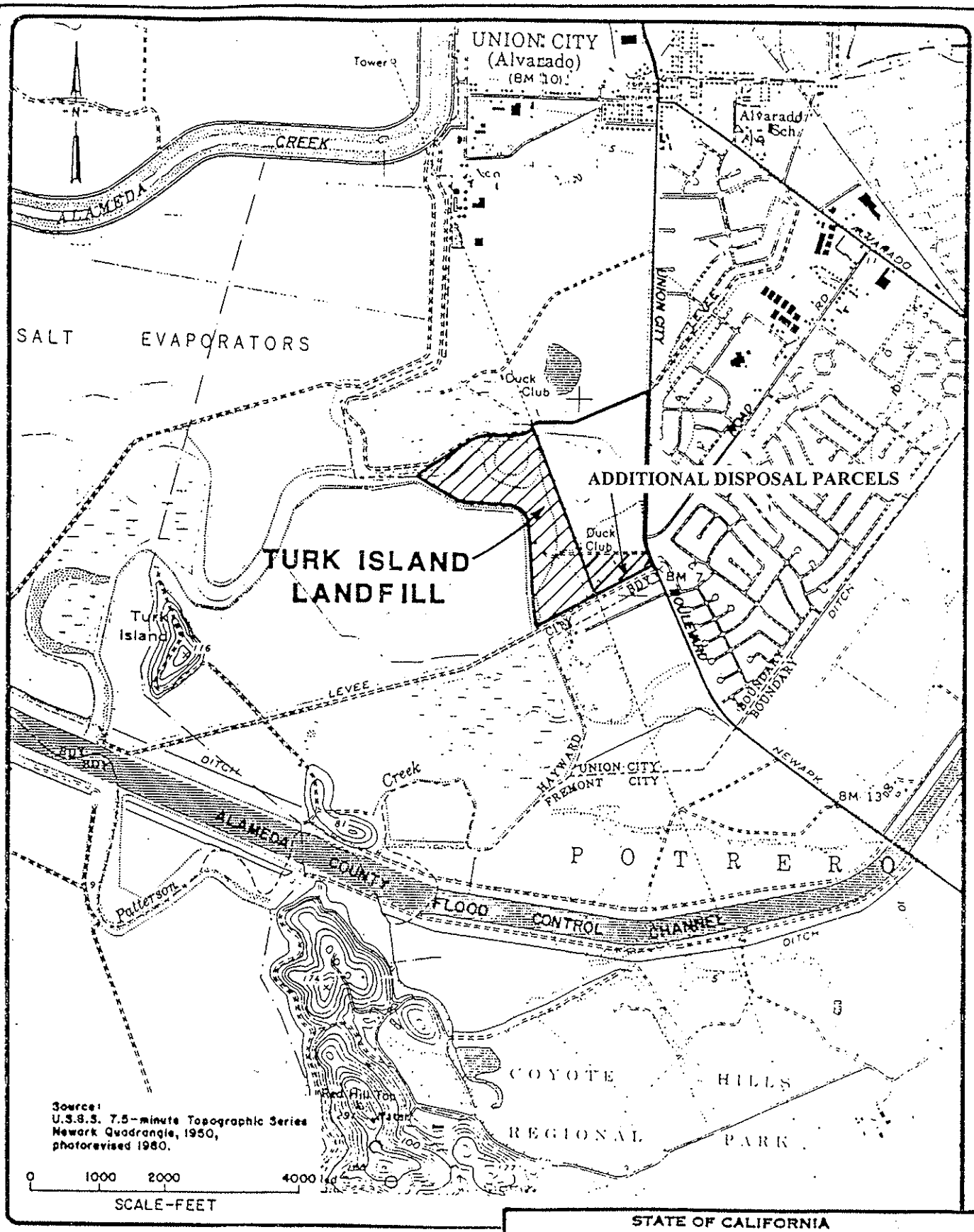
27. This Board's Order No. 88-040 is hereby rescinded.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 19, 1997.

Loretta K. Barsamian
Executive Officer

Figures: Figure 1 - Site Location Map

Attachment: Attachment A - Discharge Monitoring Program



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Figure 1
Site Location Map
Turk Island Class III Landfill
Union City, Alameda County

DRAWN BY: JMP	DATE: 2-19-97	DRWG. NO. 97026-1

ATTACHMENT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

UPDATED
DISCHARGE MONITORING PROGRAM

FOR

TURK ISLAND LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
UNION CITY, ALAMEDA COUNTY

ORDER NO. 97-026

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's (Board) Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with Chapter 15, Article 5 (CCR).

The principal purposes of a Discharge Monitoring Program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the discharger in complying with the requirements of Article 5, Chapter 15 as revised July 1, 1991.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.

2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, and surface waters surrounding the site, are considered receiving waters.

3. Standard observations refer to:

a. Receiving Waters:

1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
2) Discoloration and turbidity: description of color, source, and size of affected area;
3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
4) Evidence of beneficial use: presence of water-associated wildlife;
5) Flow rate; and
6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit.

1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate (Show affected area on map);
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source; and
3) Evidence of erosion and/or daylighted refuse;

c. The waste management unit.

1) Evidence of ponded water at any point on the waste management facility;
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
3) Evidence of erosion and/or daylighted refuse; and
4) Standard Analysis (SA) and measurements are listed on Table A (attached).

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 2550.7(b) and
2. Surface water per Section 2550.7(c)

and per the general requirements specified in Section 2550.7(e) of Article 5, Chapter 15. The Regional Board is requiring semi-annual sampling for this Discharge Monitoring Program.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any

unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number;
2. Date and time of sampling;
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Calculation of results; and
6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written detection monitoring reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:

1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations;
2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water; and
3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks;

number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.

d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.

2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

e. An evaluation of the effectiveness of the leachate monitoring or control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

2. CONTINGENCY REPORTING

a. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:

1) A map showing the location(s) of discharge;
2) Approximate flow rate;
3) Nature of effects; i.e. all pertinent observations and analyses; and
4) Corrective measures underway or proposed.

b. A report shall be made in writing to the Board within seven days of determining that a statistically significant difference occurred between a downgradient sample and California and Federal Drinking Water Standards (Maximum Contaminant Levels, MCLs) for appropriate constituents. Where not appropriate, intrawell comparison shall be used to evaluate if a statistically significant difference exists in groundwater quality at a given location. Notification shall indicate what detection limit(s) has/have been exceeded. The discharger shall immediately resample at the compliance point where this difference has been found and re-analyze.

c. If resampling and analysis confirms the earlier finding of a statistically significant difference between monitoring results and the detection limit, the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 2550.8(k)(5) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 2550.9 of Chapter 15.

d. Within 180 days of determining statistically significant evidence of a release, submit to the Regional Board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. The annual report may incorporate the second semi-annual report of the previous year. The annual report shall contain:

a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a $3^1/_2$" computer data disk, MS-DOS ASCII format, tabulating the year's data;

b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements;

c. A map showing the area, if any, in which filling has been completed during the previous calendar year;

d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater;

e. An evaluation of the effectiveness of the leachate monitoring/control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of

leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. ON-SITE OBSERVATIONS - **Observe Monthly, Report Semi-annual**

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-`n'	Located on the waste disposal area as deli-neated by a 500 foot grid network.	Standard observations for the waste management unit.	Monthly
P-1 thru P-`n' (per-imeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Monthly
L-1 thru L-'n'	At each point of discharge. Include a map indicating locations of discharge(s)	Standard test as outlined in on Table A-2. Grab sample taken from seeps with flow rates exceeding 2 gpm.	Semi-annual or each occurrence.

B. FACILITIES MONITORING - **Observe quarterly, Report semi-annually**

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report semi-annually. The facilities to be monitored shall include, but not be limited to:

a. Perimeter diversion channels and run-on/run-off control features;
b. Final cover system;
c. Gas monitoring system; and
d. Leachate Management facilities and secondary containment.

C. GROUNDWATER, LEACHATE, and SEEPAGE MONITORING - **Sample and Report Semi-annual**

Groundwater and surface water shall be monitored as outlined below and on Table A-2 (Attached). Monitoring locations are shown in Figure A-1

Table A-1
Monitoring Points

Media	Sample Point	Frequency	Analysis
Groundwater	MW-4, MW-6	Semi-annual[1]	W.L., Table A-2
Groundwater	MW-1, MW-2, MW-3, MW-4, MW-4A[2], MW-5, MW-6, MW-7, MW-8	Annual	W.L., Table A-2
Leachate	LMW-1, LMW-2, LMW-3, LMW-4[3], LMW-6, LMW-7, P-1, P-2, P-3, P-4, P-6,	Semi-annual[3]	W.L. (All), Table A-2 (LMW-4)[3]
Seeps	At seep source	At time of discovery	Table A-2, SVOC

Notes:

[1] VOC monitoring will be semi-annual, all other analyses shown in Table A-2 are annual.

W.L. Water level/leachate level measurement and thickness of any free phase liquid for this location

[2] MW-4A , a deep aquifer well, will have water level measured only. If Alameda County Water District begins pumping the adjacent well, MW-4A will change to annual monitoring.

[3] LMW-4 will be sampled and analyzed annually for first two years only. Provide results in annual report.

SVOC Semivolatiles by EPA Method 8270

Table A-2
Analytical Monitoring Parameters

Analytical Parameter	EPA Method
pH	Field
Total Dissolved Solids	160.1
Electrical Conductivity	Field
VOC	601
Arsenic[1]	7060
Cadmium[1]	6010
Copper[1]	6010
Lead[1]	7421
Nickel[1, 2]	6010
Nitrate[3]	300
Nitrite[3]	300

Notes:

1 Dissolved metals
2 Analyze Nickel only for monitoring wells MW-2 and MW-7.
3 Analyze Nitrate/Nitrite only for monitoring wells MW-3 and MW-8.

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 97-026.

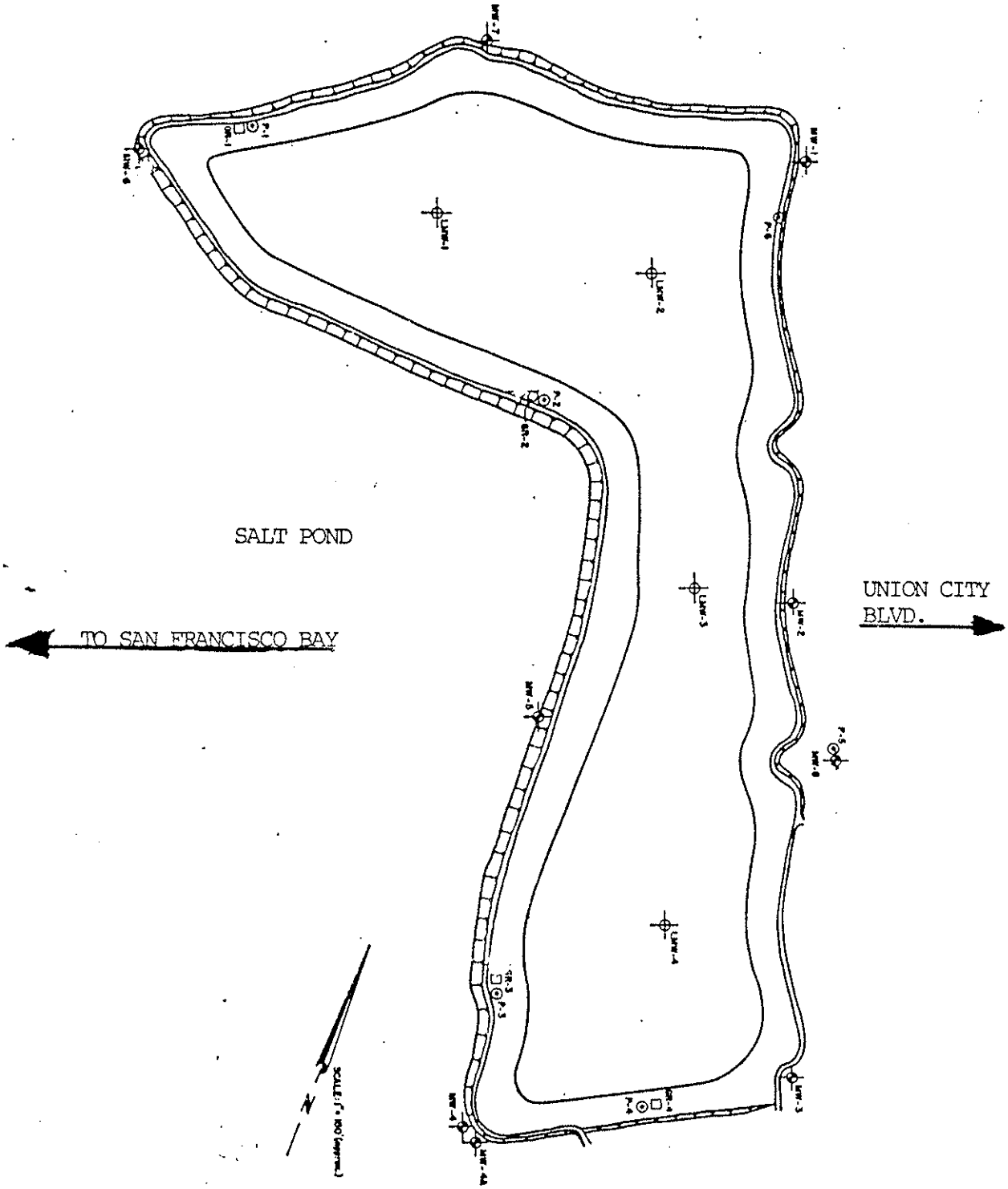
2. Is effective on the date shown below.

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Loretta K. Barsamian
Executive Officer

Date Ordered:February 19, 1997

Attachment: Figure A - Well Location Map



EXPLANATION

- LMW-4 — LEACHATE MONITORING WELL LOCATION
- SR-4 — LEACHATE SUMP
- P-5 — LEACHATE PIEZOMETER
- MW-1 — GROUNDWATER MONITORING WELL

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Figure A-1
Well Location Map
Turk Island Class III Landfill
Union City, Alameda County

DRAWN BY: JMR	DATE: 2-20-97	DRWG. NO. 97026A1